

as long ago as 1879, by M. Greeff, at the Canaries; but an imperfect study of them led that naturalist to refer two of them to the Syllidiæ and one to the Lycoriidæ. I have again found not only Claparède's *Hydrophanes*, but also Greeff's three types; and, besides these, two new genera, which also very evidently belong to the Phyllocociæ. This makes a total of six genera, presenting a regular gradation in the concentration of the postcephalic segments and the arrangement of their appendages.

Among the Alciopiæ I have only met with two new species.

As to the animals the like of which inhabit the surface only during the larval life, and descend to the bottom during the rest of their existence, it becomes difficult, when one meets with them in a certain state of development, to say whether they are examples belated in their pelagic existence, but which finally dwell at the bottom, or organisms which have definitively adapted themselves to conditions of existence quite different from those of the rest of the family. The question can hardly be solved when we do not find well-developed sexual products. It is in this doubtful class that I shall range *Ophryotrocha*, Claparède, although the Genevese naturalist saw it loaded with ova. In it I shall also place a *Polynoë*, to which I for the present abstain from giving a name, but which appears to me to present a real adaptation to pelagic life.

The following is the complete list of the species observed:—

Aphroditeæ:—*Polynoë*, sp. ?

Lumbriconereideæ:—*Ophryotrocha puerilis*, Clap. & Meezn.

Syllidiæ:—A. Without alternate generations: *Evogone gemmifera*, Pag.; *Sphærosyllis pirifera*, Clap.; *S. hystriæ*, Clap.; *Grubea limbata*, Clap.

B. With alternate generations: *Autolytus*?, *Virchowia clavata*, Langerh.; and several undetermined Sacconereids.

Phyllocociæ:—*Pelagobia longocirrata*, Greeff; *Maupasia cæca*, C. Vig.; *Hydrophanes Krohni*, Clap.; *Pontodora pelagica*, Greeff; *Ioda microceros*, C. Vig.; *Phalacrophorus pictus*, Greeff.

Alciopiæ:—*Asterope candida*, Clap.; *Alciope Cantrainii*, Clap.; *A. microcephala*, C. Vig.; *Vanadis heterochaeta*, C. Vig.; *Rhynchonerella capitata*, Greeff.

Tomopteræ:—*Tomopteris Kefersteini*, Greeff; *Sagittella Kowalewskyi*, N. Wagn.

It is to be remarked that of these twenty species, four are new, five have hitherto only been noticed at the Canaries by M. Greeff, and one at Madeira by M. Langerhans.—*Comptes Rendus*, Sept. 7, 1885, p. 578.

*On the Organization of Truncatella.* By M. A. VAYSSIÈRE.

The author, somewhat erroneously, says that the genus *Truncatella* has hitherto been generally regarded as a Pulmonate Gasteropod, and the only writers to whom he refers as holding a contrary

opinion are Lowe and Clark. But most recent naturalists place *Truncatella* among the Branchiferous Mollusca. The author has obtained specimens of *Truncatella truncatula* from the Gulf of Lyons, and describes its general organization and especially its mode of respiration.

By carefully crushing the shell and then tearing to pieces the anterior part of the animal the author displayed an elongated organ, composed of from twelve to fifteen triangular lamellæ covered with long vibratile cilia. This organ, which is a true *branchia*, is attached to the roof of a large respiratory cavity observed at the dorsal surface of the mollusk. It is placed transversely to the axis of the body, and its lamellæ can be moved by the animal simultaneously or separately for the renewal of the surrounding water. The mollusk can store up a certain quantity of water in its respiratory cavity, which enables the animals to remain a long time out of the water.

The author describes the principal points observed by him in the anatomy of *Truncatella*. In front of the buccal bulb there is a long proboscis, which may be employed to assist in locomotion, although the foot is usually the sole organ of progression. In the buccal bulb there are two horny jaws, and between them a very long radula, of which the dental formula is 2, 1, 1, 1, 2. The stomach is also furnished with horny pieces serving to complete the trituration of the food. The liver occupies the truncated extremity of the shell (about the last two whorls) and is large; it discharges itself by a single duct, which opens into the intestine just behind the stomach.

The genital gland (male or female) is placed immediately in front of the liver, to which it always adheres more or less. The excretory duct (deferent canal or oviduct) runs along the right side of the body, following the intestine, and opens into the respiratory cavity near the anus; in the male it terminates in a long, cylindrical, unarmed penis. More or less enveloping the intestine and genital duct are various glands (the organ of Bojanus and prostate or albumen-gland); but these could not be separated on account of the small size of the animals.

The nervous system consists of an œsophageal collar with two voluminous centres placed above the œsophagus and almost joined together, the cerebroid ganglia; two inferior or pedal ganglia, nearly as large as the preceding, to which they are attached by two connexions on each side, and to each other by a long commissure; and four much smaller visceral ganglia, placed two and two at the sides of the œsophagus and only united to the supra-œsophageal centres, complete the collar. The visceral ganglia are united by two long connexions with a fifth centre, the viscerogenital ganglion, which is buried in the glandular mass surrounding the intestine. Besides these nine centres there are the buccal ganglia, placed at the posterior part of the bulb, below the origin of the œsophagus. The eyes

occupy the basilar region of the tentacles; the otocysts rest upon the pedal ganglia and are united to the cerebroid ganglia by two very delicate nerves. Each otocyst contains a single large spherical otolith.

The author, in conclusion, notices a singular Vorticellidan Infusorian of the genus *Scyphidia*, which occurred on the extremity of the copulatory organ of several of his *Truncatellæ*. The species of this genus have hitherto been known only from fresh water; to this marine species he gives the name of *Scyphidia Fischeri*. It has a cylindrical body, slightly attenuated above; its peristome is not much reflexed; and it has a broad and very thick foot, enabling it to adhere strongly to the bodies on which it occurs. Its surface is slightly striated in the direction of its length. These Infusoria move very slowly.—*Comptes Rendus*, Sept. 7, 1885, p. 575.

*On the Development of Aurelia aurita and Cotylorhiza borbonica.*

By Dr. A. GÖRRE.

The first segmentations of the ovum produce neither exclusively equal nor exclusively unequal blastomeres, but the two occur promiscuously together.

A *cœlogastrula* with a narrower or wider archenteron and a prostoma always exists; but, so far as I can see, is *never produced by invagination*. There is rather in the *cœloblastula* a perfectly irregular migration of endodermal cells into the blastocœloma, so that there originates from it a *sterrogastrula* of which the endoderm becomes secondarily excavated (archenteron) and breaks out (prostoma). By the closure of the prostoma and the development of cilia on the ectoderm the *cœlogastrula* is converted into the larva (planula), which swims along with the vertical (aboral) pole forward and attaches itself thereby.

Before or after the attachment a sacciform *invagination of the ectoderm* is produced at the prostomial end (Kowalevsky), and this becomes the *persistent ectodermal œsophagus*, which breaks through into the stomach. At the same time the endoderm becomes sacculated in the form of the finger of a glove at two opposite sides between the œsophagus and the ectoderm; these first two *gastral sacs* are continued downwards like grooves in the wall of the stomach, two gastral folds being produced there in each case. Between the two primary gastral sacs a new but broader gastral sac is formed on each side; and the four sacs surrounding the œsophagus at the same time by their contiguity form four *septa*, which are continued downwards into the gastral folds.

The *tentacles* grow forth above the gastral sacs, at first one over each of the primary, and then three over each of the secondary sacs; of these latter (3+3) tentacles the four outer ones push forth each in a septal plane. It is only at a later period that the four quadrants become equal in their dimensions and in number of tentacles.